



IMPACT OF INFORMATION AND COMMUNICATION TECHNOLOGIES IN EDUCATION (ICT)

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ABSTRACT

Information and communication technologies (ICT) can be defined as the use of hardware and software for efficient management of information. ICTs can empower teachers and learners, transforming teaching and learning processes from being highly teacher-dominated to student-centered, and that this transformation will result in increased learning gains for students, creating and allowing for opportunities for learners to develop their creativity, problem-solving abilities, informational reasoning skills, communication skills, and other higher-order thinking skills. In this study the performance of the students were found considerably improved by the use of ICT. The results indicate that the technical resources for using ICT at school are very good. The research was a descriptive survey. A considerable improvement of 18.4% was achieved. An increase in student's achievements especially in terms of knowledge, comprehension, practical skill and presentation skill in subject areas such as mathematics, science and social study was clearly visible. Through ICT, images can easily be used in teaching and improving the retentive memory of students, teachers can easily explain complex instructions and ensure students comprehension and teachers are able to create interactive classes and make the lessons more enjoyable, which could improve student attendance and concentration. The integration of ICT into education highly rewarding as it may be, but can face a number of challenges which need to be addressed in an effective way.

KEY WORDS: ICT, Learning, Achievement, Students, Teachers, Abilities, Challenges.

INTRODUCTION:

"Technology has been shown to positively influence student learning when students explore technology-rich tasks that simultaneously require them to use higher-order thinking skills (HOTS), such as analyzing or evaluating information or creating new representations of knowledge." (Polly, 2011). Information and communication technologies (ICT), is to convey a vast amount of information in a very short period of time. "Classes with online learning, whether completely online or blended, on average produce stronger learning outcomes than learning face-to-face alone." (Underwood, 2009)

The following are the objectives of this paper:

1. To investigate whether the use of ICT produce better result.
2. To analyze the results for a clear statistical outcome beyond doubt of random fluctuations.
3. To discuss any potential challenges in the implementation of ICT based education.

There is a consensus that the development of any country depends upon the quality of education programs offered to citizens. The computer and the internet are especially useful to enhance student engagement in learning and positively impact student performance and achievement. In addition, the major promises of ICTs use in education systems of developing countries focus on training teachers in new skills and introducing innovative pedagogies into the classrooms, investing on ICT infrastructure for schools and creating networks among educational institutes, improving overall standard of education by reducing the gap in quality of education between schools in urban and rural areas. The initiation of smart school with objectives to foster self-paced, self assessed, and self-directed learning through the applications of ICTs, and developing ICT policy for education and training. A technology has changed the way people live, work and learns. The use of technology in education is one of the main challenges for education policy makers (Zalzadeh, 2006)

Uses of ICTs for simulations and modeling in science and math have been shown to be effective. Schools use ICT to make it easy for both students and teachers of their work (Saha and Khan 2014). In addition, ICT provides wide array of information and effective lessons. That is also easy for students to do their work by using word processing. It has an impact on both character and attitude. In Watson's (2001) description, ICTs have revolutionized the way people work today and are now transforming education systems. As a result, if schools train children in yesterday's skills and technologies they may not be effective and fit in tomorrow's world. This is a sufficient reason for ICTs to win global recognition and attention. Teachers need to know that ICT has the potential to make a significant contribution to their pupils' knowledge, understanding and skills in different subjects, through the use of simulations and modeling, to help pupils understand phenomena which may be too slow, too fast, too dangerous or too expensive to investigate in the school laboratory, and to allow them to investigate the effects of changing variables in the situations represented or to consolidate and reinforce conceptual understanding. The use of ICT in science lessons always support

pupils' efficient and effective learning, an animated simulation of the topics should be used because it is the most effective means of illustrating. Teacher must know how to structure pupils' work with ICT to maximize their learning and make best use of available time. Traditional methods of education are no longer able to meet the needs of today's learners. New technologies provide opportunities including the ability to tailor learning to the individual (Aminpour 2007).

On the other hand there are number of challenges that are road blocks in the way of successful integration of ICT into education system. Schoepp (2005) listed various such difficulties and called them barriers. These barriers are challenges in the way of integration of ICT in education. These barriers may be broadly categorized into teacher level and school level barriers.

Methods to be used:

Two groups of 15 students each of class 10th were selected. Students with odd roll numbers were selected in group A and with even roll numbers were selected in group B, so that the students with random intelligence were selected in both groups. First group A was taught with simple conventional method and same topic Digestive System (an animated simulation of the digestive system) was taught in group B using power point presentation. A test of 25 multiple choice questions was conducted after the completion of lesson.

Result and Discussion:

The performance of the two groups is shown in figure 1 and 2. Table 1 depicts the mean performance of two groups. The average score of group A, taught with conventional methods was 13.6 whereas the average score of group B was found to be 18.2. Thus the average performance for group A was 54.4% and the average performance for group B was 72.8%. Therefore we can conclude that using power point presentation a considerable improvement of 18.4% was achieved. As random sampling has been assured through selection of two groups of students having even and odd roll numbers respectively, we can safely assume the improvement in the score can be attributed to the use of ICT methods. The research found that there is direct relationship between the ICT and their perceived impact of ICT on learning. It can be concluded that using information and technology is effective in increasing educational motivation and raising school marks.

ICT facilitates the collaborative learning environment in schools for teachers and students in which communication is easier. It develops the interest among the students and makes the students to gain the command over the content. The teachers also got motivated through ICT as the students are adapted to the new system. ICT helps in generating different ideas in the mind of an individual. ICT is a great tool for increasing the concentration and retention of the Students. ICT helps in enhancing the knowledge of the Students and Teachers. It reduces the stress among the Students. It enhances the Quality Education. ICTs target memory system such that, there is greater likelihood of retention and less need for inefficient rote memory.

However besides these clear cut benefits there are inevitable challenges as can be expected of the implementation of a new technology. Khalid (2009) and

Balanskat et.al.(2006) discussed various limitations and barriers to the successful integration of ICT in teaching and learning. The difficulties in integration of ICT in school education system can be generally divided into two categories. First category can be teacher related barriers These include

- Lack of teacher confidence resulting from inadequate command over the subject
- Inadequate teacher competence to synergize teaching and learning process by merging conventional teaching with ICT.
- Inevitable resistance to change.

Second category of challenges can be school level barriers.

- Lack of time resulting from low teacher taught ratio.
- Lack of effective training of teachers.
- Lack of technical support
- Lack of access to resources
- Lack of funds
- Top down approach in implementation of policy without the assessment of teachers and students.

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Table 1.

Group	Number of students	means
A	15	13.6
B	15	18.2

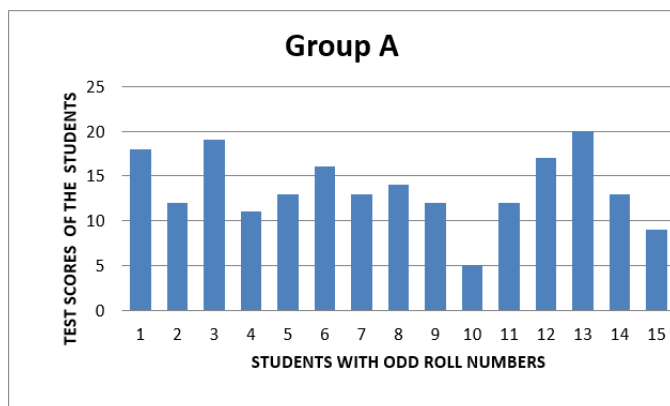


Figure 1 Performance of group A

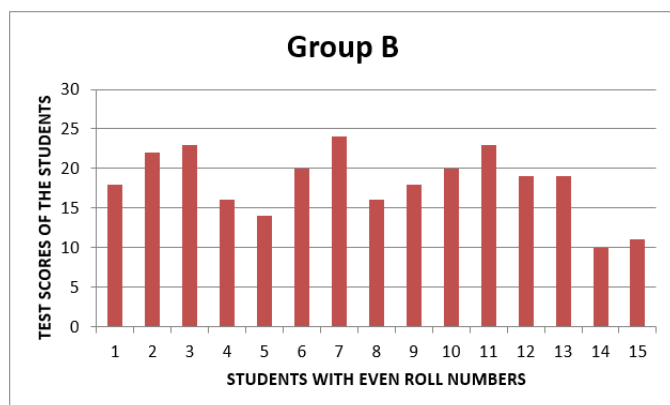


Figure 2: Performance of group B

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